

THE "COMPLEAT" TAXONOMIST

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Narrowly the taxonomist is primarily concerned with the recognition, description, and morphological interrelationships of species. If he does this job well, he performs a vital part in the biologists' community. The fully functioning taxonomist, however, cannot remain satisfied with any such narrow restriction of his function. Taxonomy is that branch of biology in which the species-relationship of organisms is in primary focus, but the organism-as-a-whole and the world-of-organisms-as-a-whole are in the background supporting and lending significance to the taxonomist's approach.

First, the morphological forms presented by successive developmental stages must be considered along with those of the adults. The taxonomist must keep his eye on the results of studies of the embryology and immature stages. The recent interest of coleopterists in larval studies is symptomatic. But the general lack of perspective of many taxonomists is revealed by the over emphasis on the theoretical side that such studies have received in certain quarters, as though the larval morphology was any less subject to ambiguity than that of the adult. I sometimes felt that Mr. Leng tended to place too much reliance on larval studies.

Secondly, morphology even in the broadest sense of all the structures revealed by the ordinary light microscope is dependent on an underlying physiology which the "compleat" taxonomist cannot ignore. Ultimately all visible structure is dependent on the need of the organism to survive and this ability to survive is the consequent of basic atomic-molecular patterns and transformations. Moreover, in the case of bisexual forms - and nearly all our beetles are bisexual! - the species whose morphological expressions we study are populations of interbreeding individuals. Mechanisms leading to kyesamechania or inability to interbreed will thus form the basis of physiological species, which C. Ruggles Gates (Human Ancestry, Harvard Univ. Press, 1948, pp. 391-392) to the contrary notwithstanding, are species of the most valid sort! In this connection attention should be called to the recent discovery of two inter-sterile strains of the rice weevil, Calendra oryzae L. (Birch, L. C., Two Strains of Calandra oryzae L. (Coleoptera), Australian Jour. Exp. Biol. Med. Sci. XXII, 1944, pp. 271-275). One strain averages smaller than the other, but in their extreme ranges they overlap completely, so that such individuals are distinguishable only by their breeding behavior. Thus physiology, ecology, and genetics are not only in the distant background of the taxonomist's perview, but impinge on matters of his vital concern.

Thirdly, species are populations - almost always variable populations! It is becoming increasingly apparent that most variation is genetic and due to genes and modifying genes. The effects of malnutrition

and other accidents of development must always be kept in mind, but it would seem that the advance of taxonomic analysis will involve more and more genetics.

Fourthly, a species is a population adapted for life in an actual environment. Ecological relationships must figure in the adequate description of both morphological and physiological species. Moreover, the operation of natural selection in preserving or eliminating genetically produced variation is an ecological matter. No species can be said to be understood until something is known of the manner of life that makes it possible. Moreover, in connection with the environment, plant ecology and taxonomy and physiography and meteorology are in order and, because any group of organisms is the result of factors working through an extensive interval of geological time, historical geology and paleontology are involved.

Fifthly, there is that large number of species, the synanthropes, that live in close association with man, many of them to his weal or woe. Their study is theoretically a phase of ecology, but let not the taxonomist shrink from recognizing the useful side of his study. Taxonomy not only contributes to the enlightenment of the mind by making mankind acquainted with the diversity of organisms on the face of the planet, but it supplies an essential cog in enabling man to adapt himself to this biological environment. The largest group of taxonomic coleopterists in the United States is that maintained in the nation's capital by the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture. The taxonomist performs the first step in the control of a suspected organism, that of recognizing its name, so that its present occurrence may be tied in with previous experience and appropriate measures taken to study and/or control it. Moreover, much pertinent ecological distributional data is contained in economic publications. Every taxonomist should keep an eye on the economic work on his group. In Washington about one-tenth of our beetles are of economic importance, and I collect and file economic papers right along with the taxonomic ones in my library and refer to and cite them along with the others in my publications.

Such are some of the interests of the "complete" taxonomist!

GUIA DE NATURALISTAS SUDAMERICANOS

According to an announcement recently received, a book will soon be published which will list the names, addresses and general information concerning the specialities in Natural History, of professional and amateurs, Institutions and Publications, of all Latin America.

There is no charge for inserting one's name, only one must pay the subscription price in advance for a copy. The price is only two dollars, U.S. Currency.

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[Ed.]